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10/628,238	07/29/2003	Weijing Chen	P23664. (SBC T00513)	4754
7055 7590 08/03/2007 GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			EXAMINER WILSON, ROBERT W	
			ART UNIT 2616	PAPER NUMBER
			NOTIFICATION DATE 08/03/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

Application No.

10/628,238

Applicant(s)

CHEN ET AL.

Examiner

Robert W. Wilson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-10, 12 and 18-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8, 12 and 18-21 is/are rejected.
- 7) ☒ Claim(s) 9-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

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***Claim Objections***

1. Claims 18-20 are objected to because of the following informalities: Referring to claim 18, the examiner objects to the usage of "comprising" twice in the preamble because it makes it difficult to determine where the preamble ends and the limitations begin. The examiner has assumed that method comprising is the end of the preamble for purpose of examination. Appropriate correction is required.

***Claim Objections***

2. Claims 9-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3 are rejected under 35 U.S.C: 102(E) as being anticipated by Hurren (U.S.

Patent No.: 6,788,681).

Referring to claim 1, Hurren teaches: A method for sending data through a provider network from an originating network to a destination network in a virtual private network (col. 2 lines 14 to 54) the method comprising:

encapsulating data link layer data from the originating network in a network layer packet (The ingress iPT card encapsulates the LAN data frame (data link layer) in an IP packet (network layer packet per col. 2 lines 14 to 54)

determining whether a data link layer address of a destination device in the destination network is mapped to a network layer address of an egress line interface in the provider network (The

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ingress IPT card determines if the egress IPT card's IP Destination address is retrievable from the database which associated the IP destination address with the MAC destination address per col. 2 lines 14 to 54)

when the destination device address is not mapped to the egress line interface address broadcasting the network layer packet to a multicast address associated with the VPN (If there is not an entry in the database for the IP Destination address associated with the MAC Destination address then the IP packet is sent to the multicast address for all IPT egress cards per col. 2 lines 14 to 54)

In addition Hurren teaches:

Regarding claim 2, further comprising with the destination device address is mapped to the egress line interface address based on a previous transmission from the destination device unicast the network layer packet to the egress line interface, unicasting the network layer packet to the egress line interface address (The database is inherently created based upon receipt of a previously received packet or transmission from a destination device. The IPT ingress card would look up the value of the destination IP address based upon the destination MAC address and send to the single address or unicast per col. 2 lines 14 to 54)

Regarding claim 3, further comprising adding a VPN identification number corresponding to the VPN to the network layer packet (col. 3 lines 22 to 27) wherein the data link layer data from the network layer packet is decapsulated only when the VPN identification number is verified after the egress line interface received the network layer packet (The IPT card egress inherently decapsulated the packet when the VPN identification number is verified and forwards the frame to the inherent destination device per col. 3 lines 22 to 36)

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hurren (U.S.

Patent No.: 6,788,681) in view of Lamberton (U.S. Patent No.: 6,789,121)

Referring to claim 18, Hurren teaches: A method of providing broadband access for a customer in a virtual private network (VPN) (Fig 2A) comprising a plurality of local network (LANs) (12,

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14, & 16 per Fig 2A) interfacing with at least one telecom service provide network (inherent provider for 10 per Fig 2A), each TSP network comprising a plurality of interfaces corresponding to the plurality of LANS (24 per Fig 2A) the method comprising:

Assigning a unique VPN identification number (VPN identifier per col. 3 lines 22 to 36)

Assigning a common multicast address to the plurality of interfaces (iPT card egress multicast address per col. 2 lines 14-54) and a unique unicast address to each of the plurality of interfaces (iPT card IP destination address)

Receiving data from an originating LAN the data being directed to a destination device in a destination LAN the origination LAN corresponding to an ingress interface of the plurality of interfaces and the destination LAN corresponding to an egress interface of the plurality of interfaces (The iPT ingress card receives LAN data with a MAC destination address corresponding to the iPT egress card of a plurality of iPT egress cards per col. 3 lines 22 to 36)

When the destination device address is not mapped to the destination LAN encapsulating the data in a multicast packet having the unique address of the ingress interface as a source address and the multicast address as a destination address (When the destination address in the LAN packet which inherently carries a MAC source address is sent to a iPT egress card whose IP Destination address is not mapped in the database with the corresponding MAC destination address the LAN packet is encapsulated and sent to the multicast address as a destination address which is associated with the iPT card egress VPN per col. 3 lines 22 to 36)

Transmitting the encapsulated data to all interface corresponding to the plurality of LANs based on the multicast address (The iPT ingress card encapsulates the LAN data corresponding to the plurality of LANs and sends to the multicast address as a destination address which is associated with the iPT cards egress VPN per col. 3 lines 22 to 36)

wherein the frame is decapsulated only at the egress interface and the egress interface forward the frame to the destination device (The iPT card egress inherently decapsulated the packet and forward the frame to the inherent destination device per col. 3 lines 22 to 36)

Hurren does not expressly call for: VPN identifier assigned to a customer.

Lamberton teaches: VPN identifier assigned to a customer per Fig 1.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add VPN the customer identifier of Lamberton to the VPN of Hurren so that a single customer traffic can be uniquely routed over a public network

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7. Claim 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hurren (U.S. Patent No.: 6,788,681) in view of Lamberton (U.S. Patent No.: 6,789,121) further in view of Blanchet (U.S. Patent Publication No.: US2004/0013130)

Referring to claim 19, the combination of Hurren and Lamberton teach: the method of broadband access according to claim 18 and Hurren teaches: further comprising with the destination device address is mapped to the egress line interface address based on a previous transmission from the destination device unicast the network layer packet to the egress line interface, unicasting the network layer packet to the egress line interface address (The database is inherently created based upon receipt of a previously received packet or transmission from a destination device. The IPT ingress card would look up the value of the destination IP address based upon the destination MAC address and send to the single address or unicast per col. 2 lines 14 to 54

The combination of Hurren and Lamberton do not expressly call for: IPv6 packets

Blanchet teaches: IPv6 packets per Ph 1 Para [005]

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the IPv6 packet of Blanchet in place of the IP packet (inherently IPv4) of the combination of Hurren and Lamberton because IPv4 packet's address space is running out and all IPv4 system will eventually have to be replaced with IPv6 in order to withstand the growth associated with the Internet.

In addition Hurren teaches:

Regarding claim 20, further comprising: entering the VPN identification number in one of the multicast packet and the unicast packet (col. 3 lines 22 to 27) wherein the egress interface reads the VPN identification to verify that the received packet is associated with the VPN (IPT card egress inherently reads the VPN identification in order to verify that the received packet is associated with the VPN per col. 2 lines 14 to 54)

8. Claims 6, 12, & 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hurren (U.S. Patent No.: 6,788,681) in view of Blanchet (U.S. Patent Publication No.: US2004/0013130)

Referring to claim 21, Hurren teaches: A method for providing broadband access to a virtual a virtual private network (Fig 2A) comprising a plurality of local area networks (LANS) (12, 14, & 16 per Fig 2A) configured to interface with an service provider (inherent provider for 10 per Fig 2A) through broadband access links (connection via 24 per Fig 2A) the method comprising:

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encapsulating the LAN frame from an originating LAN of the VPN in an IP packet of the service provider network (The ingress IPT card encapsulates the LAN data frame in an IP packet (network layer packet) via inherent service provider network per col. 2 lines 14 to 54)

determining whether an address of a destination device in a destination LAN is mapped to an egress line interface (The ingress IPT card determines if the egress IPT card's IP Destination address is retrievable from the database which associated the IP destination address with the MAC destination address per col. 2 lines 14 to 54)

when the destination device address is not mapped to the egress line interface address broadcasting the IP packet to a multicast address with the VPN (If there is not an entry in the database for the IP Destination address associated with the MAC Destination address then the IP packet is sent to the multicast address for all IPT egress cards per col. 2 lines 14 to 54)

wherein the IP packet is received at the egress line interface based on the multicast address, the LAN frame being decapsulated and transmitted to the destination LAN when the VPN identification number is verified (The IPT card egress inherently decapsulated the packet when the VPN identification number is verified and forwards the frame to the inherent destination device per col. 3 lines 22 to 36)

Hurren does not expressly call for: IPv6 packets

Blanchet teaches: IPv6 packets per Pg 1 Para [005]

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the IPv6 packet of Blanchet in place of the IP packet (inherently IPv4) of Hurren because IPv4 packet's address space is running out and all IPv4 system will eventually have to be replaced with IPv6 in order to withstand the growth associated with the Internet.

In addition Hurren teaches:

Regarding claim 6, in which the packet includes an address of an ingress line interface which receives the LAN frame as a source address and an Ip address of the egress line interface to which the IP packet is routed for verification as a destination address when the address of the destination device is mapped to the egress line interface (col. 2 lines 14 to 54)

Regarding claim 12, mapping an address of the egress line interface to the address of the destination device, based on address information received by the ingress line interface in a transmission from the destination device and transmitting subsequent IP packets to the destination device using a unicast address of the egress line interface based on the mapping (col. 2 line 13 to col. 6 line 6)

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9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hurren (U.S.

Patent No.: 6,788,681) in view of Blanchet (U.S. Patent Publication No.: US2004/0013130)

further in view of Tabata (U.S. Patent Publication No.: US2001/0016914)

Referring to claim 5 the combination of Hurren and Blanchet teach: the method for providing broadband access of the VPN according to claim 21 and IPv6 packet

The combination of Hurren and Blanchet do not expressly call for: discarding an IP packet when VPN is not verified.

Tabata teaches: discarding an IP packet when VPN is not verified per Pg 6 Para [0098]

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the discarding of Tabata to the system of Hurren and Blanchet in order to improve the quality of the system by only allowing packets to travel to the appropriate VPN.

10. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hurren (U.S.

Patent No.: 6,788,681) in view of Blanchet (U.S. Patent Publication No.: US2004/0013130)

further in view of Khali (U.S. Patent No.: 7,110,375)

Referring to claim 7 the combination of Hurren and Blanchet teach: the method for providing broadband access of the VPN according to claim 21 and IPv6 packet

The combination of Hurren and Blanchet do not expressly call for: VPN number in a header extension per Fig 4

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the VPN number in the header extension Khali to system of the combination of Hurren and Blanchet in order to build a system in which packets can be routed on a VPN basis.

Referring to claim 8 the combination of Hurren, Blanchet, and Khali teach the method for providing broadband access to the VPN according to claim 7 and the VPN identification number.

Hurren and Khali do not expressly call for: VPN identification number to include a multiple of four octets



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Blanchet teaches: VPN identification number to include a multiple of four octets (370 per Fig 4 is made up of 32 bits or four octets)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the VPN identification number which is a multiple of four octets of Blanchet to the VPN of the combination of Hurren, Blanchet, and Khali in order to utilize a 32 bit word format of Figure 4.

### *Response to Amendment*

11. Applicant's arguments with respect to claims 1-3, 5-10, 12, 14-15, & 17-23 have been considered but are moot in view of the new ground(s) of rejection.

### *Conclusion*

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert W. Wilson whose telephone number is 571/272-3075.

The examiner can normally be reached on M-F (8:00-4:30).

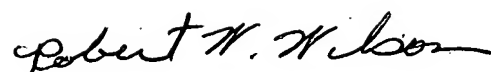
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571/272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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A handwritten signature in cursive script, reading "Robert W. Wilson".

Robert W Wilson

Examiner

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RWW  
7/31/07